Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ALESSANDRO CHIABRERA, BRUNO BIANCO
and JONATHAN J. KAUFMAN

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Appeal No. 1999-2337
Application 08/655,257

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ON BRIEF

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Before HAIRSTON, JERRY SMITH, and FLEMING, Administrative Patent Judges.

FLEMING, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 21, 24, 27 and 30. Claims 22, 23, 25, 26,

28, 29, 31 and 32 are objected to for being dependent upon rejected claims.

In a preferred embodiment of the invention, appellants disclose an apparatus and method for reproducing a three-dimensional scene on a specialized light display which offers full multiviewpoint capability and autostereoscopic views.

Independent claim 1 is reproduced as follow:

1. Apparatus for providing a three-dimensional image of a three-dimensional scene, said apparatus comprising:

(a) a set of M two-dimensional views of said three-dimensional scene;

(b) encoding means for processing said set of M two-dimensional views to obtain a set of display-excitation electrical-input signals; and

(c) planar display means connected for response to said set of display-excitation electrical-input signals, whereby to produce said three-dimensional image of said three-dimensional scene.

The references relied on by the examiner are as follows:

Karras	4,134,104	Jan. 9, 1979
Cline et al. (Cline)	4,525,858	Jun. 25, 1985
DeMond et al (DeMond)	5,214,419	May 25, 1993
Kuga	5,592,215	Jan. 7,

1997

(filed Mar. 26, 1995)

Claims 1, 2, 9, 10, 13, 14, 17 and 18 stand rejected under 35 U.S.C. § 102 as being anticipated by Kuga.

Claims 3, 4, 11, 12, 15, 16, 19 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kuga in view of Cline.

Claims 5 through 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kuga in view of DeMond.

Claims 21, 24, 27 and 30 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kuga in view of Karras.

Rather than repeat the arguments of the Appellants or the Examiner, we make reference to the Briefs[1] and the Answer for the details thereof.

OPINION

After careful review of the evidence before us, we do not agree with the Examiner that claims 1, 2, 9, 10, 13, 14, 17

[1] Appellants filed an Appeal Brief on March 25, 1999. Appellants filed a Reply Brief on July 26, 1999. The Examiner mailed a notice of entry of the Reply Brief on September 30, 1999.

and 18 are anticipated by the applied reference, Kuga.

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. ***See In re King,*** 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and ***Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.,*** 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

Appellants argue on pages 7 and 8 of the Brief and on pages 4 through 6 of the Reply Brief that Kuga does not teach the Appellants' claim limitations as required under 35 U.S.C. § 102.

In particular, Appellants argue that Kuga does not teach a "planar display" that "produce[s] said three-dimensional image" or a "sequence of three-dimensional images" as recited in independent claims 1 and 2. Appellants further argue that Kuga does not teach the steps of "driving said planar display" to "produce said three-dimensional image" or "produce a sequence of three-dimensional images" as recited in independent claims 17 and 18.

On page 4 of the Answer, the Examiner states that Kuga

discloses using a planar display. Examiner point us to figures 1 and 2, label 4. On page 8 of the Examiner's Answer in the response to argument, the Examiner states again that Kuga clearly shows a planar display and points to figures 1 and 2, label 4, and figure 6, label 16. The Examiner further states that the claims do not require a single planar display as Appellants argue.

On page 5 of the Reply Brief, Appellants respond to the Examiner's argument by stating that the term "planar" used in the claims cannot read on a plurality of flat panels because of the common meaning of the term "planar" and the statutory requirements of 35 U.S.C. § 112, sixth paragraph. Appellants point to the common dictionary definition of "planar" as being "of relating to or laying in a plane." Appellants further argue that throughout their specification, Appellants make it clear that the term "planar" is intended to convey a two-dimensional display "laying" in a single plane. Appellants argue that the Examiner's interpretation that the Kuga's plurality of stacked planar panels read on Appellants' claim limitation, "planar display" is unjustified under 35

U.S.C. § 112, sixth paragraph, with respect to independent claims 1 and 2 which both recite "planar display means."

Our reviewing court has stated in ***In re Donaldson Co. Inc.,*** 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) that the "plain and unambiguous meaning of paragraph six is that one construing means-plus-function language in a claim must look to the specification and interpret that language in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the specification provides such disclosure." In addition, we note that the plain language of paragraph six makes it clear that one must construe "step for claims" in the same manner. Moreover, when interpreting a claim, words of the claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor. ***Carroll Touch, Inc. V. Electro Mechanical Sys., Inc.*** 15 F.3d 1573, 1577, 27 USPQ2d 1836, 1840 (Fed. Cir. 1993).

Thus, in order for us to determine the scope of the claims before us we must turn to Appellants' specification. We note that the planar display means corresponds to a reflective light device 19 as disclosed on pages 10 and 11 of the specification. The specification states that the reflective light device 19 is a digital micromirror device offered by Texas Instruments. The specification states that the reflective light device is a set of very small mirrors or micromirrors that are electronically controlled to reflect light in one or two possible orientations all arranged in a single plane. Thus, a planar display means must be properly construed as being a display having single picture elements or pixels that are arranged in a single plane.

Turning to Kuga, we find that Kuga discloses in column 5, lines 60 through 63, that the display device includes picture elements arrange in three panels that are not in a single plane. Kuga further discloses in column 8, lines 28 through 38, that the flat display panel is three stacked flat display panels in which the pixels are arranged on each of these display panels. Therefore, we find that Kuga does not

disclose a planar display means as recited in claims 1 and 2. Furthermore, we find that Kuga does not disclose driving said planar display as recited in

claims 17 and 18. Therefore, we will not sustain the Examiner's rejection of claims 1, 2, 9, 10, 13, 14, 17 and 18 as being anticipated by Kuga.

Claims 3, 4, 11, 12, 15, 16, 19 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kuga in view of Cline. Appellants argue that none of the references discloses a planar display device that produces a three-dimensional image of a three-dimensional scene as recited in independent claims 3 and 4 or the steps of driving a planar display device to produce a three-dimensional image as recited in independent claims 19 and 20. In response to this argument, the Examiner argues on page 9 of the Answer that Kuga clearly shows a planar display panel.

As we have shown above, we must properly construe the scope of the claim limitation "planar display means" and the

step of "driving a planar display" in light of the Appellants' specification. Therefore, for the same reasons as we have shown above, we fail to find that Kuga meets this limitation. Therefore, we will not sustain the Examiner's rejection of claims 3, 4, 11, 12, 15, 16, 19 and 20 under 35 U.S.C. § 103.

Claims 5 through 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kuga in view of DeMond. Appellants argue that the Examiner's assertion that Kuga mentions using mirror/reflecting devices to display the images in column 1, lines 48 through 55 is an improper reason for combinability of the references.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." ***In re Fritch,*** 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon,*** 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). It is further established that "[s]uch a suggestion may come from the nature

of the problem to be solved, leading inventors to look to references relating to possible solutions to that problem." ***Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.,*** 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), ***citing In re Rinehart,*** 531 F.2d 1048, 1054, 189 USPQ 143, 149 (CCPA 1976) (considering the problem to be solved in a determination of obviousness). The Federal Circuit reasons in ***Para-Ordnance Mfg. Inc. V. SGS Importers Int'l Inc.,*** 73 F.3d 1085, 1088-89, 37 USPQ2d 1237, 1239-40 (Fed. Cir. 1995), ***cert. denied,*** 519 U.S. 822 (1996), that for the determination of obviousness, the court must answer whether one of ordinary skill in the art who sets out to solve the problem and who had before him in his workshop the prior art, would have been reasonably expected to use the solution that is claimed by the Appellants. However, "[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of the invention." ***Para-Ordnance Mfg. Inc.,*** 73 F.3d at 1087, 37 USPQ2d at 1239, ***citing W.L. Gore & Assocs., Inc. v. Garlock, Inc.,*** 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13. In addition, our reviewing court requires the Patent and

Trademark Office to make specific findings on a suggestion to combine prior art references. ***In re Dembiczak,*** 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed. Cir. 1999).

From the arguments of the Examiner, it appears that the Examiner is arguing that Kuga does suggest to use the DeMond display for each of the three panels shown in figure 1 of the Kuga system. However, this does not answer the question of how Kuga or DeMond would have suggested transforming the three-dimensional display as taught by Kuga into a planar display as claimed by the Appellants. Upon our review of Kuga and DeMond, we fail to find any reason or suggestion for making this modification.

Claims 21, 24, 27 and 30 stand rejected under 35 U.S.C. § 103 as being patentable over Kuga in view of Karras. Appellants argue on pages 9 and 10 of the Reply Brief that none of the cited references discloses or suggests the use of an "orthogonal expansion" to drive signals used to drive a display producing a three-dimensional image as recited in each

of claims 21, 24, 27 and 30. Appellants argue that as set forth in Appellants' specification, the term "orthogonal expansion," is used to denote a specific type of mathematical representation used by the Appellants to drive electrical signals from a plurality of two-dimensional views. The Appellants point us to page 5, lines 19 through 22; page 13, line 19 to page 14, line 19; page 16, lines 18 through 28; and page 34, lines 23 through 27. On pages 7 and 11 of the Answer, the Examiner argues that Karras clearly describes the use of an orthogonal expansion by stating the electrically energized active display nodes at preselected coordinate points within the volume of the display where each display sheet is subdivided into fields by grids forming orthogonal arrays.

Upon our review of Karras, we find that the term "orthogonal" used by Karras is limited to a geometric relationship of elements within its display. Karras does not disclose the Appellants' claimed orthogonal expansion which must

be interpreted to mean a specific type of mathematical representation used to derive an electrical signal from a plurality of two-dimensional views as claimed.

In view of the foregoing, the decision of the Examiner rejecting claims 1 through 20, 21, 24, 27 and 30 is reversed.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)	
JERRY SMITH Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
MICHAEL R. FLEMING Administrative Patent Judge	)	

MRF:pgg
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